

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated April 5, 2006, has been received and its contents carefully reviewed.

Claims 1, 3-9, 11-15, 20, 21, 26 and 27 are rejected and claims 1 and 3-6 are objected to by the Examiner. Claims 1 and 3-6 have been amended. Claims 1, 3-9, 11-15, 20, 21, 26 and 27 remain pending in this application.

In the Office Action, claims 1, 3, 5-9, 12-15, 20, 21, 26 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2002/0008792 to Chung et al. (hereinafter "Chung") in view of U.S. Patent No. 5,253,091 to Kimura et al. (hereinafter "Kimura"). Claims 4 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura, and further in view of U.S. Patent No. 5,436,747 to Suzuki (hereinafter "Suzuki"). Claims 1 and 3-6 are objected to for informalities.

Claims 1 and 3-6 are amended, so the objections relating to claims 1 and 3-6 are now moot.

In the Office Action, claims 1, 3, 5-9, 12-15, 20, 21, 26 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura. Applicant respectfully traverses the rejection of claim 1 and requests reconsideration. Independent claim 1 recites "a plurality of liquid crystal cells defined by the gate and data lines, wherein each liquid crystal cell comprises a thin film transistor at a crossing of the gate and data lines, and a pixel electrode connected to the thin film transistor at a first side portion, wherein the liquid crystal cells include a first horizontal line of liquid crystal cells having thin film transistors connected to preceding ones of adjacent data lines, and a second line of liquid crystal cells having thin film transistors connected to successive ones of adjacent data lines," and "a groove formed within a second side portion of the pixel electrode adjacent the plurality of data lines, wherein the second side portion is opposite the first side portion, so that the pixel electrode has a substantially diagonally symmetric shape." Chung and Kimura, singly or in combination, fail to teach or suggest at least these features of the claimed invention.

The Examiner states that it would have been obvious to place a groove to make the pixel electrode have a substantially diagonally symmetric shape, and that the rearrangement of the

parts is within the ordinary level of skill and refers to MPEP 2144.04 VI (C). The section of the MPEP cited by the Examiner clearly contemplates the rearrangement of separate parts. The pixel electrode is a single structure. The location of the groove helps to define that single structure, but is not a part separate from it. As can be seen by inspection and as admitted by the Examiner, the groove in Chung and the present invention are in different locations, and thus result in different pixel electrode structures. Accordingly, Applicants strongly argue that it would not be obvious to change the location of the groove in Chung to result in the structure of the present invention.

Further, Applicants do not agree that there is a teaching to combine Chung and Kimura. The Examiner states “it would have been obvious to a person of ordinary skill in the art to arrange the TFT connection to preceding ones of adjacent data lines, and the TFT connection to successive ones of adjacent lines in every one horizontal line alternatively besides the use of dot inversion pixels for the benefit of reducing the screen flicker without increasing electric power consumption.” Chung is trying to have improved resolution without sacrificing the storage capacitance or the aperture ratio. There is not an identified need in Chung to reduce screen flicker without increasing electric power consumption. Further, there is not a need to improve the resolution in Kimura that would lead one to combine it with Chung. Hence without a motivation to combine Kimura and Chung, claims 1, 3, and 5-8 are allowable over Kimura and Chung.

Applicant respectfully traverses the rejection of independent claim 9 and requests reconsideration. Claim 9 recites “a plurality of liquid crystal cells arranged in a matrix pattern defined by the crossings, wherein each of the plurality of liquid crystal cells includes a pixel electrode and a thin film transistor coupled between an adjacent gate line, an adjacent data line, and the pixel electrode, wherein the pixel electrode has a groove formed at a diagonally opposite portion to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines.” Chung and Kimura, singly or in combination, fail to teach or suggest at least this feature of the claimed invention. Accordingly, Applicant respectfully submits that claim 9, and claims 12-15 and 20, which depend from claim 9, are allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 21 and requests reconsideration. Independent claim 21 is allowable in that it recites “a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a cut-out portion facing an adjacent data line opposite to a thin film transistor, wherein the cutout portion is at a diagonally opposite portion of the pixel electrode to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines.” Chung and Kimura, singly or in combination, fails to teach or suggest at least this feature of the claimed invention for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 21 is allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 26 and requests reconsideration. Independent claim 26 is allowable in that it recites “a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a groove facing an adjacent data line and a substantially diagonally symmetric shape so that a parasitic capacitance at side portions of the plurality of pixel electrodes adjacent the plurality of data lines is substantially equal, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines.” Chung and Kimura, singly or in combination, fails to teach or suggest at least this feature of the claimed invention for the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 26 is allowable over Chung.

Applicant respectfully traverses the rejection of independent claim 27 and requests reconsideration. Independent claim 27 is allowable in that it recites “forming a plurality of pixel electrodes arranged in a matrix pattern adjacent the plurality of data lines, wherein each pixel electrode within the plurality has a groove facing an adjacent data line and a substantially diagonally symmetric shape so that a parasitic capacitance at side portions of the plurality of pixel electrodes adjacent the plurality of data lines is substantially equal, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines.” Chung and Kimura, singly or in combination, fails to teach or suggest at least this feature of the claimed invention for

the same or similar reasons as that for independent claim 1. Accordingly, Applicant respectfully submits that claim 27 is allowable over Chung.

In the Office Action, claims 4 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chung in view of Kimura and further in view of Suzuki. Applicant respectfully traverses the rejection of claim 4 for the same or similar reasons as the rejection of claims 1 above. Kimura and Suzuki, alone or in combination, fail to cure the deficiency of Chung to teach or suggest “a plurality of liquid crystal cells defined by the gate and data lines, wherein each liquid crystal cell comprises a thin film transistor at a crossing of the gate and data lines, and a pixel electrode connected to the thin film transistor at a first side portion, wherein the liquid crystal cells include a first horizontal line of liquid crystal cells having thin film transistors connected to preceding ones of adjacent data lines, and a second line of liquid crystal cells having thin film transistors connected to successive ones of adjacent data lines,” and “a groove formed within a second side portion of the pixel electrode adjacent the plurality of data lines, wherein the second side portion is opposite the first side portion, so that the pixel electrode has a substantially diagonally symmetric shape.” Accordingly, Applicant respectfully submits that claim 4, as it depends from claim 1, is allowable over any combination of Chung, Kimura, and Suzuki.

Applicant respectfully traverses the rejection of claim 11 and requests reconsideration for the same or similar reason as that regarding independent claim 9 above. Kimura and Suzuki, alone or in combination, fail to cure the deficiency of Chung to teach or suggest “a plurality of liquid crystal cells arranged in a matrix pattern defined by the crossings, wherein each of the plurality of liquid crystal cells includes a pixel electrode and a thin film transistor coupled between an adjacent gate line, an adjacent data line, and the pixel electrode, wherein the pixel electrode has a groove formed at a diagonally opposite portion to the thin film transistor, and wherein thin film transistors of consecutive ones of the plurality of liquid crystal cells arranged within a vertical line are alternately coupled to adjacent ones of the plurality of data lines.” Accordingly, Applicant respectfully submits that claim 11, as it depends from claim 9, is allowable over any combination of Chung, Kimura, and Suzuki.

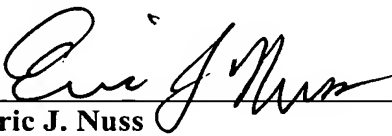
Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. *A duplicate copy of this sheet is enclosed.*

Respectfully submitted,

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